

Appendix C: Guidelines for Selecting Safe Routes To School

Choosing a safe bicycle route to school is different from choosing a safe walking route because cyclists and pedestrians have different needs for maximum safety. The higher speed of cyclists increases the need for visibility, smooth surfaces and predictable interaction with other road users.

Note also that bicycle skills vary among students more than walking skills do and they are usually acquired at a later age. Younger children have less skill at estimating closing speed for automobiles and have less ability to process peripheral vision. Younger children should therefore cycle mainly on less complicated streets, where they can focus on one hazard at a time. Older students will cycle faster and so they need to have longer sight lines. Routes suitable for high school age students may be unsuitable for elementary school students, and vice versa.

Publishing recommended routes to school is not sufficient for encouraging bicycling to school. Other measures are also needed, including bicycle education, safe bike parking, rewards for cycling (such as bike-to-school days), bike-to-school groups lead by an adult, and so forth.

When choosing safe bicycle routes to school, look for:

- **The safest, most direct route** - Detours to avoid hazards should not add significantly to the length of the ride, or they will be ignored.
- **On-street routes** - Children riding on the sidewalk have an increased risk of collision with an automobile 2.5 times over riding on the street. A “bike path” that parallels a road is the same as a sidewalk. Riding a bicycle on sidewalks is prohibited in most jurisdictions in California, at least in business districts.

Use off-street routes only when they have no intersections with streets or driveways, or when they provide a substantial short cut. The faster the cyclists, the more important it is to avoid sidewalks.

Cyclists should ride on the right side of the street with traffic for maximum safety (wrong way sidewalk riding has the highest risk). When the road is so narrow and so busy that young cyclists cannot ride on it safely, they should walk their bikes on the sidewalk. Generally, this is only feasible to require near intersections with crossing guards.

Where uphill slopes are so steep that the cyclists cannot maintain a straight line (about percent slope equal to age up to 12 years old), students should get off and walk on their bikes on the sidewalk. Similarly steep downgrades require well-maintained brakes and training in braking on hills. Students without that training should walk their bikes down the hills.

- **Adequate width of curb lane and good maintenance of road edge** - For safe sharing of the curb lane by motorists and cyclists, it should be at least 14 feet wide, with no on-street parking—wider is better, particularly for younger cyclists who cannot hold as straight a line. Broken pavement and accumulated debris on the side of the road can narrow the effective width substantially. If there is a bike lane, its width can be added to the rightmost travel lane to determine if width is adequate. On very quiet residential roads with low traffic speeds and good sight lines, even young children can safely take a lane and wide curb lanes are not needed.

Also watch out for drain grates, potholes, obstructed visibility, dogs off-leash and other obvious hazards. It is best to scout out the routes by bicycle and consult with cyclists who regularly cycle in the area.

- **Right turns, not left turns** - It is much easier for a cyclist (particularly a beginning cyclist) to turn right than to turn left. This means that the best route away from school may differ from the best route to school.

There are two ways to safely make left-turns. The first is merging into the left-turn lane and the second is crossing, stopping, turning the bike in place and crossing again. The merge-left technique can be learned by students as young as nine years old (later for multi-lane streets), but younger students should cross to the far right corner and then cross over to the left.

When left-turns are necessary, it is best if they can be done from low-traffic streets onto low-traffic streets, with all-way stops or traffic signals. T-intersections make left turns even easier, since there are fewer potential conflict points with motor vehicle movements.

- **No right-turn only lanes where cyclists go straight** - Right-turn-only lanes require cyclists to merge across a lane of traffic to continue straight. This skill can be learned by middle-school students, but only with proper bicycle instruction.

Where right-turn-only lanes are unavoidable, younger cyclists should probably be directed to walk their bikes on the sidewalk.

- **Few stop signs** - Stopping requires significant extra effort to regain lost momentum, tempting students to run stop signs illegally. It is safer for them to ride on a slightly busier street with fewer stops and the protection of having the right-of-way, than to risk running stop signs.
- **Only traffic signals that sense cyclists and give sufficient green time** - For a cyclist to use intersections with traffic signals safely, the traffic signals should detect the bike and make sure there is enough green time for the cyclist to clear the intersection. Traffic signals that do not meet this standard should have their sensors adjusted and be re-timed. Younger children may need to dismount and become pedestrians, using the pedestrian push-button and walking their bikes in the crosswalk.
- **Few curb cuts** - The turning traffic at commercial driveways is a serious hazard to cyclists (even more so if they are riding on the sidewalk).
- **Low traffic volume and low speeds** - Although this criterion is often the first one people think of, it is actually the least important because most accidents involve turning traffic, not passing traffic. Streets with few intersections or curb cuts are safer, even if motor vehicle volumes and speeds are higher.